

SEMICONDUCTOR OPTICAL AMPLIFIER SUITABLE FOR COARSE WDM COMMUNI- CATIONS AND LIGHT AMPLIFICATION METHOD

Abstract

An active layer contains quantum structures. The active layer amplifies light propagating therein while current is injected therein. Electrodes are provided for sections of the active layer sectionalized along a light propagation direction. The electrodes inject different currents into the sections. Current is supplied to the electrodes in such a manner that a first current density is set to one section of the active layer and a second current density is set to another section. The first current density is lower than that at a cross point and the second current density is higher than that at the cross point. The cross point is a cross point between gain coefficient curves at least two different transition wavelengths of the quantum structures. The curves are drawn in a graph showing a relation between a density of current injected into the active layer and a gain coefficient of the active layer.